

**Amendments to the Specification:**

Please replace paragraphs in this application with the following identically-numbered paragraphs:

[0015] FIG. 2C shows a somewhat idealized cross-sectional view of the layer stack of FIG. 2B after photoresist layer 220 and BARC layer ~~212~~ 222 have been processed through lithography. In this example, a photoresist mask pattern is created with a set of trenches 214a-b.

[0016] FIG. 2D shows the cross-sectional view of the layer stack of FIG. 2C after trench mask layer ~~201~~ 202 has been processed in the plasma system, further extending trench 214a-b to cap layer 203.

[0017] FIG. 2E shows the cross-sectional view of the layer stack of FIG. 2D, after photoresist layer 220 and a BARC layer ~~212~~ 222 are removed.

[0026] The invention relates, in one embodiment, to a method of etching a substrate in a plasma processing system. The substrate has a semi-conductor layer, a first barrier layer disposed above the semi-conductor layer, a low-k layer disposed above the first barrier layer, a third hard mask layer disposed above the low-k layer; a second hard mask layer disposed above the third hard mask layer, and a first hard mask layer disposed above the second hard mask layer. The method includes alternatively etching the substrate with a first etchant and a second etchant, wherein the first etchant has a low selectivity to a first hard mask material of the first hard mask layer, a third hard mask material of the a third hard mask layer, and a first barrier layer material of the first barrier layer, but a high selectivity to a second hard mask material of the second hard mask layer; and wherein the second etchant has a high selectivity to the first hard mask material of the first hard mask layer, the third hard mask material of the third hard mask layer, and the first barrier layer material of the first barrier layer, and the ~~first~~ second etchant has a low selectivity to the second hard mask material of the second hard mask layer.

[0066] Referring now to FIG. 5A, a simplified process in a plasma processing system is described in which a substrate is etched with a set of hard masks, according to one embodiment of the invention. Initially, a substrate is introduced in a plasma processing system, the substrate having a semi-conductor layer, a first barrier layer disposed above the semi-conductor layer, a

low-k layer disposed above the first barrier layer, a third hard mask layer disposed above the low-k layer; a second hard mask layer disposed above the third hard mask layer, and a first hard mask layer disposed above the second hard mask layer, at step 502. The substrate is then alternatively etched with a first etchant and a second etchant, wherein the first etchant has a low selectivity to a first hard mask material of the first hard mask layer, a third hard mask material of the a third hard mask layer, and a first barrier layer material of the first barrier layer, but a high selectivity to a second hard mask material of the second hard mask layer, and wherein the second etchant has a high selectivity to the first hard mask material of the first hard mask layer, the third hard mask material of the third hard mask layer, and the first barrier layer material of the first barrier layer, and the ~~first~~ second etchant has a low selectivity to the second hard mask material of the second hard mask layer, at step ~~502~~ 504.

[0067] Referring now to FIG. 5B, a simplified process in a plasma processing system is described in which a substrate is etched with a set of hard masks, according to one embodiment of the invention. Initially, a substrate is introduced in a plasma processing system, the substrate having a semi-conductor layer, a first barrier layer disposed above the semi-conductor layer, a low-k layer disposed above the first barrier layer, a second barrier layer disposed above the low-k layer, a third hard mask layer disposed above the second barrier layer, a second hard mask layer disposed above the third hard mask layer, and a first hard mask layer disposed above the second hard mask layer, at step 506. The substrate is then alternatively etched with a first etchant and a second etchant, wherein the first etchant has a low selectivity to a first hard mask material of the first hard mask layer, a third hard mask material of the a third hard mask layer, and a first barrier layer material of the first barrier layer, but a high selectivity to a second hard mask material of the second hard mask layer, and wherein the second etchant has a high selectivity to the first hard mask material of the first hard mask layer, the third hard mask material of the third hard mask layer, and the first barrier layer material of the first barrier layer, and the ~~first~~ second etchant has a low selectivity to the second hard mask material of the second hard mask layer and the second barrier layer, at step 508.